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effect of moving the telescope through the angle in front of the fixed prism.

About three years ago I showed a rough model of the plan I have now described, to Mr. Gassiot, for whom I made the large instrument which was some time in use at the Kew Observatory. Mr. Gassiot immediately asked me if I would apply this arrangement to his large spectroscope. As I did not at that time see my way to make it self-acting by connecting the prisms with the micrometer-screw, I did not feel impelled to carry out the matter at once, owing to the fact that about this time the mapping of the solar spectrum with the large spectroscope in question was discontinued. I also felt that, with that munificent liberality for which Mr. Gassiot has distinguished himself, he had simply asked me to add this contrivance to his large and costly instrument in the interest of science generally, and not with any view to its immediate use.* Since this time, and particularly while I was constructing his solar spectroscope, Mr. Norman Lockyer has repeatedly urged upon me the desirability of completing the arrangement; and from the manner in which it has been received by the distinguished scientific men who have done me the honour to examine it minutely, I am induced to hope that its application will tend to facilitate further researches in spectrum analysis.

Note on the Alteration in the Colour of the Belts of Jupiter.

By John Browning, Esq.

In the Report of the Astronomer Royal to the Board of Visitors, there is the following remark:—

"There has been little opportunity of employing the instrument on other objects, except in a drawing of *Jupiter* by Mr. Carpenter.

"The comparison of this with drawings made eight or nine years ago appears to negative the idea of any change in the colour of *Jupiter's* belts."

With all possible deference to the Astronomer Royal and Mr. Carpenter, I beg to submit that a comparison of drawings made either this year or last year with others made eight or nine years ago, might not throw any light on this question. There is, as I have pointed out in my previous papers on this subject, some reason to believe that the change in colour in the equatorial belt of *Jupiter* is periodical. This belt of the planet at the time mentioned may have been of the same colour as during the last presentation,—that it was differently coloured during the presentation of 1868–9, is a fact attested by some six or seven, at least, well-known and skilful observers. It is true

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* I am indebted to M. Gassiot for the opportunity of exhibiting the instrument on this occasion.

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that in nearly every case these observers were using *reflectors*, of apertures varying between 6 and 12-inch, but I have heard from observers who have used achromatics varying between 4 and 8-inch, that they distinctly remarked the change in colour, although they do not seem to have seen it so plainly as those who have used reflectors. Unfortunately, none of these observers have published the results of their observations.

There is a singular agreement between observers who have described this phenomenon. The colour has been described as yellow, ochreish, brown, and tawny. All agree in ascribing this colour to the equatorial belt of the planet, ordinarily seen of a pure, or at most a pearly white.

The change has been one that might have been easily observed even by those who have not a quick eye for colour, by reason of the fact that the equatorial belt, which is ordinarily the brightest portion of the disk of the planet, and is so represented in every drawing I have ever seen of it, was, during the last presentation, much darker in colour than the bright belts nearer to the north and south poles of the planet.

Clapham, June 10th.

On the Proper Motion of Groombridge, 1830.

By W. T. Lynn, B.A.

In the year 1842 Professor Argelander announced* that he had detected that a star of the seventh magnitude on the boundaries of the constellations *Ursa Major* and *Canis Venatica* was animated by a Proper Motion considerably exceeding that known for any other star; amounting, in fact, annually to about 7″ of a great circle. This star had been observed by Groombridge, being numbered 1830 in his Catalogue of Circumpolar Stars, which was reduced to the epoch January 1, 1810, and edited by the Astronomer Royal, the date of publication being 1838. Having ascertained from Mr. Airy the exact times of Groombridge's observations, Argelander was able, the year after his discovery, to state† that the star's annual Proper Motion amounted to +5″·167 in R.A. and +5″·70 in N.P.D. This satisfied within the limits of probable error of observation all the other positions observed by Lalande, Bessel, Argelander, and Nicolai.

It occurred to me recently that, as a large number of very accurate observations of this star had been made at the Royal Observatory, Greenwich, since the year 1843, in which Professor Argelander made this determination, and that these observations extended now over more than a quarter of a century, it might be worth while to put them together, with the view of ascertaining whether the large Proper Motion in question continues uniform.

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* *Astronomische Nachrichten,* No. 455.

† Ibid. No. 475.

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